**MITSUBISHI HEAVY INDUSTRIES, LTD.**

**16-5, KONAN 2-CHOME, MINATO-KU**
**TOKYO, JAPAN**

November 15, 2013

Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Attention: Mr. Perry Buckberg

Docket No. 52-021
MHI Ref: UAP-HF-13255

**Subject:** **Transmittal of Technical Report "Safety I&C System Description and Design Process" (MUAP-07004, Revision 8)**

**References:** 1) "MHI's Amended Responses to US-APWR DCD RAI for Chapter 7," UAP-HF-11204, dated July 1, 2011, ML11187A281.
2) "MHI's Responses to US-APWR DCD RAI for Chapter 7, Response to the Additional Questions from the NRC, Revision 8 of the Technical Report MUAP-07005-P "Safety System Digital Platform –MELTAC-", and mark up of DCD Tier 1 on Revision 3," UAP-HF-11244, dated August 1, 2011, ML11223A270.
3) "MHI's Responses to US-APWR DCD RAI for Chapter 7, Response to the Additional Questions from the NRC," UAP-HF-11314, dated September 13, 2011, ML11258A153.
4) "MHI's Responses to US-APWR DCD RAI for Chapter 7," UAP-HF-11412, dated November 29, 2011, ML11336A156.
5) "MHI's Responses to US-APWR DCD RAI for Chapter 7," UAP-HF-12052, dated February 27, 2012, ML12062A136.
6) "MHI's Responses to US-APWR DCD RAI No. 972-6900 (SRP 07.09) and Amended Response to US-APWR DCD RAI No. 778-5866 REVISION 3 (SRP 07.09)," UAP-HF-12309, dated November 29, 2012, ML123400454.
7) "MHI's Amended Response to US-APWR DCD RAI No. 775-5836 Revision 3 (SRP 07.08)," UAP-HF-13140, dated June 18, 2013, ML13172A055.
8) "MHI's Response to US-APWR DCD RAI No. 992-6999 (SRP 07.09)," UAP-HF-13209, dated August 26, 2013, ML13240A040.
9) "MHI's Amended Response to US-APWR DCD RAI No. 568-4588 Revision 1 (SRP 07.05)," UAP-HF-13223, dated September 11, 2013.
10) "MHI's Response to ACRS Subcommittee Questions on April 25-26, 2013 Regarding DCD Chapter 7," UAP-HF-13232, dated September 20, 2013.
11) "MHI's Response to US-APWR DCD RAI No. 996-7040 (SRP 07.07)," UAP-HF13244, dated November 1, 2013.

With this letter, Mitsubishi Heavy Industries, Ltd. (MHI) transmits to the U.S. Nuclear Regulatory Commission (NRC) copies of the technical report entitled "Safety I&C System Description and Design Process" (MUAP-07004, Revision 8).

This document has been revised to incorporate changes committed to in various RAI responses (References 1 through 11).

As indicated in the enclosed materials, this document contains information that MHI considers proprietary, and therefore should be withheld from public disclosure pursuant to 10 C.F.R. §

D081
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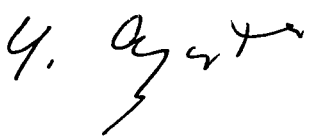
2.390 (a)(4) as trade secrets and commercial or financial information which is privileged or confidential. A non-proprietary version of the document is also being submitted with the information identified as proprietary redacted and replaced by the designation "[ ]."

This letter includes a copy of the proprietary version of the response (Enclosure 2), a copy of the non-proprietary version of the response (Enclosure 3), and the Affidavit of Yoshiki Ogata (Enclosure 1) which identifies the reasons MHI respectfully requests that all material designated as proprietary in Enclosure 2 be withheld from disclosure pursuant to 10 C.F.R. § 2.390 (a)(4).

Each version of the response is included on a separate compact disc (CD). Attachment 1 is a listing of the files contained in Enclosures 2 and 3. Attachment 2 is a matrix which identifies sections of MUAP-07004, where applicable, which contain information requested by the staff in various Requests for Additional Information (RAIs), and is being provided for the staff's convenience.

Please contact to Mr. Joseph Tapia, General Manager of Licensing Department, Mitsubishi Nuclear Energy Systems, Inc. if the NRC has questions concerning any aspect of this submittal. His contact information is provided below.

Sincerely,



Yoshiki Ogata,
Executive Vice President
Mitsubishi Nuclear Energy Systems, Inc.
On behalf of Mitsubishi Heavy Industries, Ltd.

Enclosures:

1. Affidavit of Yoshiki Ogata

2. CD 1:
   MUAP-07004-P Revision 8, "Safety I&C System Description and Design Process"
   - Version containing proprietary information

3. CD 2:
   MUAP-07004-NP Revision 8, "Safety I&C System Description and Design Process"
   - Version not containing proprietary information

The file contained on each CD is listed in Attachment 1.

CC: P. Buckberg
J. Tapia

Contact Information
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**ENCLOSURE 1**

Docket No. 52-021
MHI Ref: UAP-HF-13255

**MITSUBISHI HEAVY INDUSTRIES, LTD.**
**AFFIDAVIT**

I, Yoshiki Ogata, being duly sworn according to law, depose and state as follows:

1. I am Executive Vice President of Mitsubishi Nuclear Energy Systems, Inc., and have been delegated the function of reviewing Mitsubishi Heavy Industries, Ltd.'s (MHI) US-APWR documentation to determine whether it contains information that should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4) as trade secrets and commercial or financial information which is privileged or confidential.

2. In accordance with my responsibilities, I have reviewed the enclosed document entitled "Safety I&C System Description and Design Process" (MUAP-07004, Revision 8), dated November, 2013, and have determined that the document contains proprietary information that should be withheld from public disclosure. Those pages containing proprietary information are identified with the label "Proprietary" on the top of the page and the proprietary information has been bracketed with an open and closed bracket as shown here "[ ]." The first page of the document indicates that information identified as "Proprietary" should be withheld from public disclosure pursuant to 10 C.F.R. § 2.390 (a)(4).

3. The basis for holding the referenced information confidential is that it describes the unique design and methodology developed by MHI for performing the I&C design of the US-APWR.

4. The information is not used in the exact form by any of MHI's competitors. This information was developed at significant cost to MHI, since it required the performance of research and development and detailed design for its software and hardware extending over several years. Therefore public disclosure of the materials would adversely affect MHI's competitive position.

5. The referenced information has in the past been, and will continue to be, held in confidence by MHI and is always subject to suitable measures to protect it from unauthorized use or disclosure.

6. The referenced information is not available in public sources and could not be gathered readily from other publicly available information.

7. The referenced information is being furnished to the Nuclear Regulatory Commission (NRC) in confidence and solely for the purpose of supporting the NRC staff's review of MHI's application for certification of its US-APWR Standard Plant Design.

8. Public disclosure of the referenced information would assist competitors of MHI in their design of new nuclear power plants without the costs or risks associated with the design and testing of new systems and components. Disclosure of the information identified as proprietary would therefore have the following negative impacts on the competitive position of MHI in the U.S. nuclear plant market.

A. Loss of competitive advantage due to the costs associated with development of the safety I&C system. Providing public access to such information permits competitors to duplicate or mimic the safety I&C system design without incurring the associated costs.
B. Loss of competitive advantage of the US-APWR created by benefits of enhanced plant safety, and reduced operation and maintenance costs associated with the safety I&C system.

I declare under penalty of perjury that the foregoing affidavit and the matters stated therein are true and correct to the best of my knowledge, information, and belief.

Executed on this 15th day of November, 2013.

Yoshiki Ogata,
Executive Vice President
Mitsubishi Nuclear Energy Systems, Inc.

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# ATTACHMENT 1

## FILES CONTAINED IN CDs

**CD 1:**

**MUAP-07004-P Revision 8, "Safety I&C System Description and Design Process"**
**- Version containing proprietary information**

Contents of CD

| File Name | Size | Sensitivity Level |
|---|---|---|
| MUAP-07004-P(R8).pdf | 5.32MB | Proprietary |

**CD 2:**

**MUAP-07004-NP Revision 8, "Safety I&C System Description and Design Process"**
**- Version not containing proprietary information**

Contents of CD

| File Name | Size | Sensitivity Level |
|---|---|---|
| MUAP-07004-NP(R8).pdf | 4.14MB | Non-proprietary |

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## ATTACHMENT 2

## REPORT SECTIONS CONTAINING INFORMATION REQUESTED BY NRC REQUESTS FOR ADDITIONAL INFORMATION (RAIs) (Sheet 1 of 2)

| DCD Sect | RAI | eRAI | Question # | Question # (sub-number) | Section, paragraph, figure, and/or table where question is answered |
|---|---|---|---|---|---|
| 7.5 | 568 | 4588 | 07.05-18 | --- | Appendix H. |
| 7.2 | 727 | 5662 | 07.02-6 | --- | Sections 3.3 (4) and 6.5.1. |
| 7.1 | 771 | 5827 | 07.01-42 | --- | Section 4.2.5 b(2). |
| 7.8 | 775 | 5836 | 07.08-23 | --- | Sections 4.2.6, 6.5.8, Figure 4.2.5, Figure 4.2-6, Figure 5.1-5, and Figure 6.5-4. |
| 7.8 | 775 | 5836 | 07.08-24 | --- | |
| 7.9 | 778 | 5866 | 07.09-24 | --- | Appendix E, Appendix F, and Table G.2-2. |
| 7.1 | 837 | 5945 | 07.01-44 | --- | Section 4.4.1. |
| 7.9 | 972 | 6900 | 07.09-25 | --- | Section 4.2.5 c. |
| 7.9 | 992 | 6999 | 07.09-26 | sub-question 1 | Section 4.2.5 c and Appendix I. |
| 7.7 | 996 | 7040 | 07.07-33 | --- | Section 5.1.8 and Appendix J. |
| MUAP-07004 | RAI-22 | --- | --- | --- | Section 4.4.1. (Submitted by UAP-HF-11204.) |
| 7 | Additional Questions from NRC | --- | 1 | --- | Sections 4.2.4 a, 4.2.4 c, 6.5.3 and Figure 6.5-2. (Submitted by UAP-HF-11244.) |
| 7 | Additional Questions from NRC | --- | 4 | --- | |
| 7 | Additional Questions from NRC | --- | 6-3 | --- | |
| 7 | Additional Questions from NRC | --- | 6-4 | --- | |
| 7 | Additional Questions from NRC | --- | 1-3 | --- | Sections 4.3, 4.4, and 4.4.1. (Submitted by UAP-HF-11314.) |
| 7 | Additional Questions from NRC | --- | 1-4 | --- | |
| 7 | Additional Questions from NRC | --- | 1-7 | --- | |

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## ATTACHMENT 2

## REPORT SECTIONS CONTAINING INFORMATION REQUESTED BY NRC REQUESTS FOR ADDITIONAL INFORMATION (RAIs) (Sheet 2 of 2)

| DCD Sect | RAI | eRAI | Question # | Question # (sub-number) | Section, paragraph, figure, and/or table where question is answered |
|---|---|---|---|---|---|
| 7 | Response to ACRS Questions on April 25-26, 2013 | --- | item 3 | --- | Figure 4.1-5. (Submitted by UAP-HF-13232.) |
| 7 | Response to ACRS Questions on April 25-26, 2013 | --- | item 13 | --- | Section 4.2.7 and Figure 4.2-7. (Submitted by UAP-HF-13232.) |
| 7 | Response to ACRS Questions on April 25-26, 2013 | --- | item 14 | --- | Sections 4.2.1, 5.1.10, 6.5.2, A.4.9, A.5.15, and A.6.7. (Submitted by UAP-HF-13232.) |